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National Aeronautics and Space Administration

NOVEMBER 26, 1996
NRA 96-OSS-13

RESEARCH ANNOUNCEMENT

Long-Term Space Astrophysics (LTSA)

Research Program

97-007214/HB

Proposals Due: **February 26, 1997**

C

OMB Approval No. 2700-0087

Long-Term Space Astrophysics (LTSA) Research Program

NASA Research Announcement
Soliciting Proposals
for Research in Space Astrophysics
for period ending
February 26, 1997

NRA 96-OSS-13
Issued: November 26, 1996

Office of Space Science
National Aeronautics and Space Administration
Washington, DC 20546-0001

Long-Term Space Astrophysics (LTSA) Research Program

This NASA Research Announcement (NRA) solicits basic research proposals relating to the analysis of data from space astrophysics observations.

The dominant objectives of this program, which was initiated in 1990, are to enhance the scientific return from space astrophysics missions by supporting long-term (up to five years) funding and to strengthen the United States long-term research base in space astrophysics.

Participation in this program is open to all categories of organizations, domestic or foreign, including educational institutions, for-profit and not-for-profit organizations, NASA centers, and other Government agencies. Proposals may be submitted at any time during the period ending February 26, 1997. Proposals received after the proposal submission due date, may be held for the next review cycle, which is planned to commence one year after the current cycle. Proposals will be evaluated by scientific peer review panels with a goal of announcing selection by April 1997.

Further details relevant to this program are included in the appendices to this Announcement. In response to the increased awareness of ecological issues on the parts of both NASA and the scientific community, NASA will conserve paper and reduce waste by making available the complete text of the NRA and appendices through the World Wide Web after the release date of November 26, 1996. The URL address is:

http://www.hq.nasa.gov/office/oss/

select "Research Opportunities."

Appendix A provides programmatic information relevant to the Long-Term Space Astrophysics (LTSA) Research Program. Appendices B and C contain instructions for preparation of solicited proposals in response to this NRA. Appendix D contains forms for use in preparing proposals in response to this NRA. Note that electronic submission of the Cover Page is required to speed proposal processing. Electronic submission of the Cover Page provides a postscript version of the Cover Page for each proposal. The URL for the Web tool is

http://nasa-review.ipac.caltech.edu/ltsa97

Proposers without access to Internet are advised to E-Mail their requests to <debra.tripp@hq.nasa.gov> to receive paper copies of this Announcement.

Identifier:	NRA 96-OSS-13
Submit Proposal To:	Long-Term Space Astrophysics Infrared Processing and Analysis Center, 100-22 California Institute of Technology 770 S. Wilson Avenue Pasadena, CA 91125
Submit Proposals By:	February 26, 1997
Number Required:	11 copies plus 1 signed original
Selecting Official:	Director, Research Program Management Division Office of Space Science
Cover Page Web Submission URL:	http://nasa-review.ipac.caltech.edu/ltsa97
Obtain Additional Information From:	Dr. Guenter Riegler Research Program Management Division Code SR Office of Space Science NASA Headquarters Washington, DC 20546-0001 USA E-mail: guenter.riegler@hq.nasa.gov Telephone: (202) 358-1588

Your interest and cooperation in participating in this effort are appreciated.

Alan N. Bunner
Science Program Director
Structure and Evolution of the Universe
Office of Space Science

Edward J. Weiler
Science Program Director
Astronomical Search for Origins
and Planetary Systems
Office of Space Science

Enclosures

List of Appendices and Enclosures

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Appendix B - Guidelines for Responding to NASA Research Announcements (NRA's) for Solicited Basic Research Proposals

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- Current and Pending Federal Support Form
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Program Description

Long-Term Space Astrophysics (LTSA)
Research Program

1. Objectives of this Program

The Long-Term Space Astrophysics Research Program is intended to enhance research in space astrophysics by providing a stable long-term source of support, up to five years; and to strengthen the United States (U.S.) long-term research base in space astrophysics.

2. Types of Proposals

For the purpose of this NRA, NASA recognizes proposals from two different groups of researchers, "Junior Researchers" and "Senior Researchers."

Junior Researchers are researchers who are early in their careers and still establishing themselves, such as postdoctoral fellows (beyond their first postdoctoral fellowship), and tenure-track faculty. Based on recommendations from peer reviewers of prior cycles of the LTSA program, we define "Junior Researchers" as those more than two years after having received their Ph.D., and fewer than eight years after the Ph.D. The rationale for the lower threshold is that many programs exist for first postdoctoral fellowships with a duration of at least two years. The rationale for the upper threshold is that most universities with tenure-track positions decide on awarding, or not awarding, tenure by the seventh year after the candidate's Ph.D.

Senior Researchers are proposers who are more experienced, as well as better established, such as tenured faculty at the university level and senior scientists at universities and research laboratories.

This distinction between Junior Researchers and Senior Researchers should be clear for most potential proposers. Any questions regarding eligibility for Junior or Senior categories should be directed via E-mail to <guenter.riegler@hq.nasa.gov>.

Support for the Junior Researchers is essential to the long-term health of the U.S. research effort in space astrophysics, while the experience of the Senior Researchers is needed to maximize the near-term research results in space astrophysics. Therefore, the allocation of funding for this NRA will be apportioned so that, pending the submission of an adequate number of highly ranked proposals, two-thirds (2/3) of the available funding for the LTSA program shall support proposals from Junior Researchers and the remaining one-third (1/3) shall support Senior Researchers.

All proposals must be endorsed by the proposer's sponsoring institution. Where a Junior Researcher is prevented from proposing as Principal Investigator because of institutional restrictions, a Sponsoring Principal Investigator may submit the proposal on behalf of the actual Science Principal Investigator, provided that the latter's name and individual research program are clearly identified.

Note that this NRA neither solicits nor shall support research/work by graduate students. The rationale for this restriction is that there are many other avenues of support for graduate work, including NASA's Graduate Student Researchers Program.

3. Scope of Proposals for Long-Term Space Astrophysics Research

This Announcement solicits proposals for research in astrophysics whose dominant emphasis is the analysis and interpretation of data from past, current, and future space astrophysics missions. In support of that activity, but as a secondary emphasis, the proposed research may include theoretical research, numerical modeling, use of existing data from ground-based or suborbital observations, and laboratory astrophysics measurements.

In addition, NASA will consider requests for support for new ground-based observations provided that the requests are clearly described, the observations are crucial to the success of the proposed effort, and their expense (including salary, travel, etc.) constitutes no more than 10 percent of the proposal's total budget.

The LTSA Research Program is intended to support research in space astrophysics that is substantial and cohesive and whose duration and scope go beyond those of the typical proposal funded by other NASA space astrophysics programs, such as the Astrophysics Theory Program, the Astrophysics Data Program, and mission-oriented observing programs.

The LTSA Research Program is not intended to support:

- investigations whose primary emphasis is theoretical research, numerical modeling, the use of existing data from ground-based or suborbital observations, laboratory astrophysics measurements or detector development, since there exist other NASA programs that support research with these kinds of emphases;
- investigations whose primary focus is on solar system objects or on the solar-terrestrial interaction, since other NASA programs support this kind of research;
- primarily the education and training of students;
- the organizing and hosting of scientific meetings; and
- substantial computing facilities or resources, beyond the workstation requests described below.

NASA recognizes that a proposal for a five-year research program cannot be as specific as a proposal for a small near-term research task. The proposer should, however, describe the research program with enough clarity to allow a peer reviewer to obtain an understanding and an appreciation of the proposed effort and its long-term goal.

4. Funding for the Long-Term Space Astrophysics Research Program

This program was begun during the FY 1990 award cycle and currently provides support for 90 research groups and individuals, with a budget level of approximately $8.2M per year. Within this program, approximately $2M per year will become available for new awards in response to this NRA.

Funds for awards under this NRA are expected to be available, subject to the annual NASA budget cycle. The Government's obligation to make awards is contingent upon the availability of appropriated funds from which payment for award purposes can be made and the receipt of proposals which the Government determines are acceptable for award under this NRA.

5. Review Process

Because of the scientific breadth of the LTSA program, the peer panels reviewing the proposals will consist of members whose expertise ranges across the various subdisciplines of astronomy. Their task will be to evaluate the scientific merits of each proposal and to compare them with those of other proposals in the same, as well as in the other, specialty areas.

6. Relationship Between the LTSA Program and Mission-Specific Observing Programs

Because of the long duration of LTSA research projects, it is assumed that a substantial portion of the necessary data will be obtained from future space astrophysics observations. However, approval of a proposal in the LTSA Research Program does not constitute approval of the specific observing programs contemplated or described by the proposer. It will be the proposer's responsibility to propose specific observations and to obtain the desired data via the appropriate mission-specific observing programs or archival research programs. The cost portions of such observing or archival-data proposals should be very low; it may include requests for travel support or other costs, but may not duplicate any salary costs.

7. Program Duration

While this NRA solicits proposals for investigations of up to five years in duration, awards will only be made for one year at a time, because of the Government's annual appropriations cycle. Accordingly, NASA is only obligated to fund research for the period designated in any accepted proposal, without regard to the duration of a flight program specified as the source of data in that proposal.

Instructions for Responding to NASA Research Announcements for Solicited Basic Research Proposals

(June 1995)

1. Foreword

a. These instructions apply to "NASA Research Announcements." The "NASA Research Announcement (NRA)" permits competitive selection of research projects in accordance with statute while preserving the traditional concepts and understandings associated with NASA sponsorship of research.

b. These instructions are Appendix I to 1870.203 of the NASA Federal Acquisition Regulation Supplement

2. Policy

a. Proposals received in response to an NRA will be used only for evaluation purposes. NASA does not allow a proposal, the contents of which are not available without restriction from another source, or any unique ideas submitted in response to an NRA to be used as the basis of a solicitation or in negotiation with other organizations, nor is a preaward synopsis published for individual proposals.

b. A solicited proposal that results in a NASA award becomes part of the record of that transaction and may be available to the public on specific request, however, information or material that NASA and the awardee mutually agree to be of a privileged nature will be held in confidence to the extent permitted by law, including the Freedom of Information Act,

3. Purpose

These instructions supplement documents identified as "NASA Research Announcements." The NRA's contain programmatic information and certain requirements which apply only to proposals prepared in response to that particular Announcement. These instructions contain the general proposal preparation information which applies to responses to all NRA's.

4. Relationship to Award

a. A contract, grant, cooperative agreement, or other agreement may be used to accomplish an effort funded in response to an NRA. NASA will determine the appropriate instrument.

b. Grants are generally used to fund basic research in educational and nonprofit institutions, while research in other private sector organizations is accomplished under contract. Contracts resulting from NRA's are subject to the Federal Acquisition Regulation and the NASA FAR Supplement (NHB 5100.4). Any resultant grants or cooperative agreements will be awarded and administered in accordance with the NASA Grant and Cooperative Agreement Handbook (NPG 5800.1D).

5. Conformance to Guidance

a. NASA does not have mandatory forms or formats for responses to NRA's; however, it is requested that proposals conform to the guidelines in these instructions. NASA may accept proposals without discussion; hence, proposals should initially be as complete as possible and be submitted on the proposers' most favorable terms.

b. To be considered responsive, a submission must, at a minimum present a specific project within the areas delineated by the NRA; contain sufficient technical and cost information to permit a meaningful evaluation; be signed by an official authorized to legally bind the submitting organization (not merely offer to perform standard services or to just provide computer facilities or services); and not significantly duplicate a more specific current or pending NASA solicitation.

6. NRA-Specific Items

Several proposal submission items appear in the NRA itself: the unique NRA identifier; when to submit proposals; where to send proposals; number of copies required; and sources for more information. Items included in these instructions may be supplemented by the NRA.

7. Proposal Contents

a. The following information is needed to permit consideration in an objective manner. NRA's will generally specify topics for which additional information or greater detail is desirable. Each proposal copy shall contain all submitted material, including a copy of the transmittal letter if it contains substantive information.

b. Transmittal Letter or Prefatory Material.

(1) the legal name and address of the organization and specific division or campus identification, if part of a larger organization,

(2) A brief, scientifically valid project title intelligible to a scientifically literate reader and suitable for use in the public press;

(3) Type of organization: e.g., profit, nonprofit, educational, small business, minority, women-owned, etc.;

(4) Name and telephone number of the principal investigator and business personnel who may be contacted during evaluation or negotiation;

(5) Identification of other organizations that are currently evaluating a proposal for the same efforts;
(6) Identification of the NRA, by number and title, to which the proposal is responding;
(7) Dollar amount requested, desired starting date, and duration of project;
(8) Date of submission; and
(9) Signature of a responsible official or authorized representative of the organization, or any other person authorized to legally bind the organization (unless the signature appears on the proposal itself).

c. Restriction on Use and Disclosure of Proposal Information. Information contained in proposals is used for evaluation purposes only. Offerors or quoters should, in order to maximize protection of trade secrets or other information that is confidential or privileged, place the following notice on the title page of the proposal and specify the information subject to the notice by inserting appropriate identification, such as page numbers, in the notice. In any event, information contained in proposals will be protected to the extent permitted by law, but NASA assumes no liability for use and disclosure of information not made subject to the notice

NOTICE: Restriction on Use and Disclosure of Proposal Information.

The information (data) contained in *[insert page numbers or other identification]* of this proposal constitutes a trade secret and/or information that is commercial or financial and confidential or privileged. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed other than for evaluation purposes; provided, however, that in the event a contract (or other agreement) is awarded on the basis of this proposal, the Government shall have the right to use and disclose this information (data) to the extent provided in the contract (or other agreement). This restriction does not limit the Government's right to use or disclose this information (data), if obtained from another source without restriction.

d. Abstract. Include a concise (200-300 word if not otherwise specified in the NRA) abstract describing the objective and the method of approach.

e. Project description.

(1) The main body of the proposal shall be a detailed statement of the work to be undertaken and should include objectives and expected significance; relation to the present state of knowledge; and relation to previous work done on the project and to related work in progress elsewhere. The statement should outline the plan of work, including the broad design of experiments to be undertaken and a description of experimental methods and procedures. The project description should address the evaluation factors in these instructions and any specific factors in the NRA. Any substantial collaboration with individuals not referred to in the budget or use of consultants should be described. Subcontracting significant portions of a research project is discouraged.

(2) When it is expected that the effort will require more than one year, the proposal should cover the complete project to the extent that it can be reasonably anticipated. Principal emphasis should be on the first year of work, and the description should distinguish clearly between the first year's work and work planned for subsequent years.

f. Management Approach. For large or complex efforts involving interactions among numerous individuals or other organizations, plans for distribution of responsibilities and arrangements for ensuring a coordinated effort should be described. Intensive working relations with NASA field centers that are not logical inclusions elsewhere in the proposal should be described.

g. Personnel. The principal investigator is responsible for supervision of the work and participates in the conduct of the research regardless of whether or not compensated under the award. A short biographical sketch of the principal investigator, a list of principal publications, and any exceptional qualifications should be included. Omit social security number and other personal items which do not merit consideration in evaluation of the proposal. Give similar biographical information on other senior professional personnel who will be directly associated with the project. Give the names and titles of any other scientists and technical personnel associated substantially with the project in an advisory capacity. Universities should list the approximate number of students or other assistants, together with information as to their level of academic attainment. Any special industry-university cooperative arrangements should be described.

h. Facilities and Equipment.

(1) Describe available facilities and major items of equipment especially adapted or suited to the proposed project, and any additional major equipment that will be required. Identify any Government-owned facilities, industrial plant equipment, or special tooling that are proposed for use.

(2) Before requesting a major item of capital equipment, the proposer should determine if sharing or loan of equipment already within the organization is a feasible alternative. Where such arrangements cannot be made, the proposal should so state. The need for items that typically can be used for research and nonresearch purposes should be explained.

I. Proposed Costs.

(1) Proposals should contain cost and technical parts in one volume: do not use separate "confidential" salary pages. As applicable, include separate cost estimates for salaries and wages; fringe benefits; equipment; expendable materials and supplies; services; domestic and foreign travel; ADP expenses; publication or page charges; consultants; subcontracts; other miscellaneous identifiable direct costs; and indirect costs. List salaries and wages in appropriate organizational categories (e.g., principal investigator, other scientific and engineering professionals, graduate students, research assistants, and technicians and other nonprofessional personnel). Estimate all manpower data in terms of man-months or fractions of full-time.

(2) Explanatory notes should accompany the cost proposal to provide identification and estimated cost of major capital equipment items to be acquired; purpose and estimated number and lengths of trips planned; basis for indirect cost computation (including date of most recent negotiation and cognizant agency); and clarification of other items in the cost proposal that are not self evident. List estimated expenses as yearly requirements by major work phases. (Standard Form 1411 may be used).
(3) Allowable costs are governed by FAR Part 31 and the NASA FAR Supplement Part 1831 (and OMB Circulars A-21 for educational institutions and A-122 for nonprofit organizations).

j. Security. Proposals should not contain security classified material. If the research requires access to or may generate security classified information, the submitter will be required to comply with Government security regulations.

k. Current Support. For other current projects being conducted by the principal investigator, provide the title of project, sponsoring agency, and ending date.

l. Special Matters.

(1) Include any required statements of environmental impact of the research, human subject or animal care provisions, conflict of interest, or on such other topics as may be required by the nature of the effort and current statutes, Executive Orders, or other current Government-wide guidelines.

(2) Proposers should include a brief description of the organization, its facilities, and previous work experience in the field of the proposal. Identify the cognizant Government audit agency, inspection agency, and administrative contracting officer, when applicable.

8. Renewal Proposals

a. Renewal proposals for existing awards will be considered in the same manner as proposals for new endeavors. A renewal proposal should not repeat all of the information that was in the original proposal. The renewal proposal should refer to its predecessor, update the parts that are no longer current, and indicate what elements of the research are expected to be covered during the period for which support is desired. A description of any significant findings since the most recent progress report should be included. The renewal proposal should treat, in reasonable detail, the plans for the next period, contain a cost estimate, and otherwise adhere to these instructions.

b. NASA may renew an effort either through amendment of an existing contract or by a new award.

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9. Length

Unless otherwise specified in the NRA, effort should be made to keep proposals as brief as possible, concentrating on substantive material. Few proposals need exceed 15-20 pages. Necessary detailed information, such as reprints, should be included as attachments. A complete set of attachments is necessary for each copy of the proposal. As proposals are not returned, avoid use of "one-of-a-kind" attachments; their availability may be mentioned in the proposal.

10. Joint Proposals

a. Where multiple organizations are involved, the proposal may be submitted by only one of them. It should clearly describe the role to be played by the other organizations and indicate the legal and managerial arrangements contemplated. In other instances, simultaneous submission of related proposals from each organization might be appropriate, in which case parallel awards would be made.

b. Where a project of a cooperative nature with NASA is contemplated, describe the contributions expected from any participating NASA investigator and agency facilities or equipment which may be required. The proposal must be confined only to that which the proposing organization can commit itself. Joints proposals which specify the internal arrangements NASA will actually make are not acceptable as a means of establishing an Agency commitment.

11. Late Proposals

A proposal or modification received after the date or dates specified in an NRA may be considered if the selecting official deems it to offer NASA a significant technical advantage or cost reduction.

12. Withdrawal

Proposals may be withdrawn by the proposer at any time. Offerors are requested to notify NASA if the proposal is funded by another organization or of other changed circumstances which dictate termination of evaluation.

13. Evaluation Factors

a. Unless otherwise specified in the NRA, the principal elements (of approximately equal weight) considered in evaluating a proposal are its relevance to NASA's objectives, intrinsic merit, and cost.

b. Evaluation of a proposal's relevance to NASA's objectives includes the consideration of the potential contribution of the effort to NASA's mission.

c. Evaluation of its intrinsic merit includes the consideration of the following factors, none of which is more important than any other:

(1) Overall scientific or technical merit of the proposal or unique and innovative methods, approaches, or concepts demonstrated by the proposal.

(2) Offeror's capabilities, related experience, facilities, techniques, or unique combinations of these which are integral factors for achieving the proposal objectives.

(3) The qualifications, capabilities, and experience of the proposed principal investigator, team leader, or key personnel critical in achieving the proposal objectives.

(4) Overall standing among similar proposals and/or evaluation against the state-of-the-art.

d. Evaluation of the cost of a proposed effort includes the realism and reasonableness of the proposed cost and available funds.

14. Evaluation Techniques

Selection decisions will be made following peer and/or scientific review of the proposals. Several evaluation techniques are regularly used within NASA. In all cases, proposals are subject to scientific review by discipline specialists in the area of the proposal. Some proposals are reviewed entirely in-house, others are evaluated by a combination of in-house and selected external reviewers, while yet others are subject to the full external peer review technique (with due regard for conflict-of interest and protection of proposal information), such as by mail or through assembled panels. The final decisions are made by a NASA selecting official. A proposal which is scientifically and programmatically meritorious, but not selected for award during its initial review, may be included in subsequent reviews unless the proposer requests otherwise.

15. Selection for Award

a. When a proposal is not selected for award, and the proposer has indicated that the proposal is not to be held for subsequent reviews, the proposer will be notified. NASA will explain generally why the proposal was not selected. Proposers desiring additional information may contact the selecting official who will arrange a debriefing.

b. When a proposal is selected for award, negotiation and award will be handled by the procurement office in the funding installation. The proposal is used as the basis for negotiation. The contracting officer may request certain business data and may forward a model contract and other information which will be of use during the contract negotiation.

16. Cancellation of an NRA

NASA reserves the right to make no awards under this NRA and to cancel this NRA. NASA assumes no liability for canceling the NRA or for anyone's failure to receive actual notice of cancellation. Cancellation may be followed by issuance and synopsis of a revised NRA, since amendment of an NRA is normally not permitted.

Additional Guidelines For The Preparation Of Proposals
In Response To NASA Research Announcement 96-OSS-13

The information contained in Appendix C augments and supersedes Appendix B and is applicable only to NRA 96-OSS-13.

Proposal Format and Content

All proposals must have a Cover Page, which may be obtained through the on-line service explained in the covering letter of solicitation to this NRA. All proposals must be endorsed by the proposer's sponsoring institution and the Cover Page contains space for this endorsement.

When completing these forms, please note that NASA recognizes only one Principal Investigator (PI) for each proposal. Other investigators are designated Co-Investigators (Co-I's), even if their proposal and science responsibilities are comparable to that of the PI. A "Sponsoring PI" (see Section 2. of Appendix A) is to be listed as the PI on the Cover Page; a note should be made next to the "Science PI" name in the Co-I section of the form.

Note further that for approved proposals, NASA plans to enter information contained in the Cover Page into electronically accessible data bases and to make these data bases accessible on its WWW homepages for the information of future proposers for this and other related astrophysics programs, and all other interested parties. The proposal titles, names of Principal Investigators with Institutions, and abstracts of all selected investigations will be published in a publicly accessible data base. Therefore, the submitted abstract should not contain any proprietary information that would preclude its release without restriction.

If substantial collaborations with other institutions are involved, letters of endorsement should be submitted by the responsible officials from those institutions. Each endorsement letter should indicate agreement with the nature of the collaboration detailed in the proposal, which should be identified by title and date of submission. All endorsement letters should refer to the Long-Term Space Astrophysics (LTSA) Research Program of the Office of Space Science.

Each proposal should include, in the order listed, the following parts:

1. Cover Page (form is provided by the submission Web tool).
2. Table of Contents.
3. A summary of the proposed science program.
4. A detailed description of the proposed science program, including objectives, work plan, schedule, and expected results. This description should provide sufficient detail to enable a reviewer to judge the scientific merits of the proposed research in relation to the objectives of the LTSA Research Program.
5. Management Plan.
6. Completed Proposal Budget Form(s) (provided in Appendix D of this NRA).
7. Completed Current and Pending Federal Support Form(s) (provided in Appendix D of this NRA).
8. Curriculum Vitae

9. Certification Forms (note: the Certification forms need only be included in the signed original proposal; see Appendix D)

10. Institutional budget forms (preference of submitting institution(s)).

Note that Budget Forms are not required for proposals originating outside the United States, since such proposals would be accepted on a no-exchange-of-funds basis only.

Page Limit

Proposals are expected to be concisely written in order to minimize the burden on the reviewers and to facilitate the overall evaluation process. The **total** length of the proposal should not exceed 15 single-spaced, double-sided typewritten sheets of paper (point size 10 or larger, with 1-inch margins). Please note that the above limitations apply to **sheets of paper** rather than to **pages,** as this is for the total length of the proposal, which includes all certifications, budget sheets, and curriculum vitae. It is recommended that 1/2 these pages should be dedicated to science justification of the project. The enclosure of reprints or preprints is discouraged. To facilitate the recycling of proposals after review, proposals should be submitted on plain, white paper only, including all budget sheets and certifications. This precludes the use of cardboard stock, plastic covers, colored paper, etc.

Budget Section

The budget section should include a budget breakdown for each year of the proposed work, not to exceed 5 years. The period from June 1 to May 31 of each succeeding year should be used for each of the grant years, starting June 1, 1997. The total yearly amounts, including amounts requested for workstations, should be entered in the Cover Page.

The budget should be presented in the Proposal Budget Form enclosed in this NRA. The budget breakdown requested in these forms will be used by the Government to evaluate costs as to reasonableness, allowability, and allocability.

If collaborations are involved with Co-I's who are at institutions different from that of the PI, and if those Co-I's anticipate support, the budget total of each participating institution should be listed under category F.4. Subgrants/Contracts in the Proposal Budget Form of the PI. Details of the budgets of such participating institutions should be provided in separate Proposal Budget Forms (which may be obtained by printing the enclosed form). In such cases, Co-I's would receive separate grants or contracts from the PI's institution.

As indicated in the Proposal Budget Form, direct labor costs should be segregated by titles or disciplines (e.g., PI, Co-I) with estimated hourly or monthly rates, number of months, and total dollar amounts for each. Indirect costs should be explained to an extent that will allow the Government to understand the basis of the estimates. With regard to other costs, each significant category should be detailed, explained, and substantiated. For example, proposals for research equipment purchases should specify the type of equipment, number of units, and unit cost. Requested travel allowances should include the destination, number of travelers, number of days, and the total cost per trip.

Current and Pending Federal Support

Following the budget section, the proposal must contain, for the PI and for each Co-I for whom support is requested, a summary of current and pending Federal support of all projects in which he or she is substantially involved. The required information must include: funding agency; grant number; project title; award amount for FY 1997, FY 1998, and total award amount; award period; and level of effort (percent). The Current and Pending Federal Support Form enclosed in Appendix D should be used for providing this information.

Curriculum Vitae

A brief curriculum vita, along with a list of relevant scientific publications covering the past five years, should be included. The curriculum vita and publications list should not exceed one page per PI or Co-I, and must adhere to the page limit described above.

Management Plan

For team effort proposals, a management plan should be included that outlines the specific responsibilities of the PI and other members of the research team. If multiple institutions are involved, the institutional responsibilities and/or other terms of agreement necessary for achieving the objectives of the program should be specified.

Proposal Quantity and Submission, Mailing Address, and Due Date

Eleven copies plus one original signed of the proposals should be sent to the following address:*

Long-Term Space Astrophysics Program
Infrared Processing and Analysis Center, 100-22
California Institute of Technology
770 S. Wilson Avenue
Pasadena, CA 91125

(*Please contact Rosanne Scholey at (818) 397-9504 for commercial delivery.)

Proposals should be mailed so as to arrive at the above address by scheduled proposal due date. Proposals received after the scheduled proposal due date, will be held for the next review cycle, which will commence one year after the current cycle.

In order to avoid errors in data entry and to increase the efficiency of proposal management, it is required that all proposers with access to the World Wide Web use the form generator provided for the Cover Page. The URL address for this tool is http://nasa-review.ipac.caltech.edu/ltsa97. Once you have completed the form, a Cover Page will be generated for you.

Please note that the generated Cover Page is acknowledgment of its receipt. If you are unable to locate your Cover Page, or have any other questions, please contact <rosanne@ipac.caltech.edu>. If you do not have access to this service, E-mail the information to <rosanne@ipac.caltech.edu>. A Cover Page will be generated and sent to your E-mail address.

Please note that receipt of the Cover Page of your proposal is not sufficient to meet the deadline for proposal submission. Paper copies of proposals must be submitted by that date, including a Cover Page, as described in this NRA. Questions regarding electronic proposal submission should be addressed to:

Rosanne Scholey
Infrared Processing and Analysis Center, 100-22
California Institute of Technology
770 S. Wilson Avenue
Pasadena, CA 91125
E-mail: rosanne@ipac.caltech.edu
Telephone: (818) 397-9504

Questions regarding NASA policy should be addressed to:

Dr. Guenter Riegler
Research Program Management Division
Code SR
Office of Space Science
NASA Headquarters
Washington, DC 20546-0001 USA
E-mail: guenter.riegler@hq.nasa.gov
Telephone: (202) 358-1588

Education and Public Outreach

"Partners in Education: A Strategy for Integrating Education and Public Outreach Into NASA's Space Science Programs" (released in March 1995) describes the Office of Space Science's approach for making education at all levels and the enhancement of the public understanding of science integral parts of space science research activities. Education and public outreach are now expected to be a part of each flight program and research discipline. The follow-on implementation plan, "Implementing the Office of Space Science (OSS) Education/Public Outreach Strategy," produced by the Education/Public Outreach Task Force of the Space Science Advisory Committee (SSAC), was published October 15, 1996.

In accordance with the policies in the OSS education strategy and the recommendations in the implementation plan, proposers are encouraged (but not required) to include education public/outreach activities in their proposals. Up to ten percent of a total grant award may be used for such activities.

Important information is contained in the OSS educational outreach strategy and in the implementation plan, which may be obtained from Dr. Jeffrey D. Rosendhal, Office of Space Science, Code S, NASA Headquarters, Washington, DC 20546-0001.

We also call your attention to the Initiative to Develop Education through Astronomy (IDEA) program. This program, currently administered by the Space Telescope Science Institute, specifically provides small grants (typically $6,000, but ranging up to $20,000) to enhance the participation of space scientists in precollege or public outreach activities. A call for proposals to the IDEA program is issued annually by the Space Telescope Science Institute. For more information on the IDEA program, contact Dr. Anne Kinney, Project Scientist for Education, Space Telescope Science Institute, 3700 San Martin Drive, Baltimore, Maryland 21218.

Guidelines for Foreign Participation

NASA welcomes proposals from outside the U.S. in response to this NRA. Proposals from non-U.S. entities should not include a cost plan. Proposals from outside the U.S. and U.S. proposals that include non-U.S. participation must be endorsed by the respective Government agency or funding/sponsoring institution in that country from which the non-U.S. participant is proposing. Such endorsement should indicate that

1. the proposal merits careful consideration by NASA; and,
2. if the proposal is selected, sufficient funds will be made available to undertake the activity as proposed.

In addition to sending twelve copies of the proposal to the Long-Term Space Astrophysics Research Program at the address given on page C-3, one copy of the proposal, along with the Letter of Endorsement, must be forwarded to:

Ms. Shiron D. Gaines
(NRA 96-OSS-13)
International Science and Aeronautics Division
Code IS
NASA Headquarters
Washington, DC 20546-0001 USA

All proposals must be typewritten in English. All non-U.S. proposals will undergo the same evaluation and selection process as those originating in the U.S. Non-U.S. proposals and U.S. proposals that include non-U.S. participation must follow all other guidelines and requirements described in this NRA.

All proposals must be received before the established closing date; those received after the closing date will be treated in accordance with NASA's provisions for late proposals. Sponsoring non-U.S. agencies may, in exceptional situations, forward a proposal without endorsement to the above address, if endorsement is not possible before the announced closing date. In such cases, however, NASA's International Science and Aeronautics Division should be advised when a decision on endorsement can be expected.

Successful and unsuccessful proposers will be contacted directly by the NASA Research Program Management Division. Copies of these letters will be sent to the sponsoring Government agency.

Should a non-U.S. proposal or a U.S. proposal with non-U.S. participation be selected, NASA's International Science and Aeronautics Division will arrange with the non-U.S. sponsoring agency for the proposed participation on a no-exchange-of-funds basis, in which NASA and the non-U.S. sponsoring agency will each bear the cost of discharging their respective responsibilities. Depending on the nature and extent of the proposed cooperation, these arrangements may entail

1. a letter of notification by NASA; and
2. an exchange of letters between NASA and the sponsoring governmental agency, or
3. a formal Agency-to-Agency Memorandum of Understanding (MOU).

Evaluation Criteria

The following criteria, listed in descending order of importance, will be used in evaluating proposals for the LTSA Research Program:

1. The overall scientific merit of the proposed research, consistent with the Scope of Proposals for LTSA Research described in Appendix A.
2. The technical feasibility of accomplishing the stated scientific goals and the probability of success of the proposed research.
3. The competence and relevant experience of the PI and any collaborators, as an indication of their ability to carry the investigation to a successful conclusion, including timely publication of peer-reviewed journal articles.
4. The commitment of the institution(s) of the investigator(s) as measured by its (their) willingness to provide the support necessary to ensure the satisfactory completion of the investigation.
5. Cost and management factors. Cost factors include the consideration of the realism and reasonableness of the proposed cost, as well as any cost sharing or support by the institution(s) of the investigator(s) or by other sources to the proposed effort. Management aspects include the time and attention the PI plans to devote personally to the investigation.

Requests for Workstations

As has been our policy in recent years, NASA may provide some investigators with the computational resources needed for the analysis selected under this NRA. The objective is not to enhance general computing capability, but rather to support research at the investigator's home institution. Preference will be given to computer systems that can support existing portable data analysis environments such as the Interactive Reduction and Analysis Facility (IRAF). Requests for workstations should be attached to the proposal on a single, separate page. The request should briefly describe the computing capabilities that are expected to exist at the proposer's institution during the period in which the research will be performed. The proposer must also explain the scientific impact if the request for the workstation is declined. The budget request for workstations should be included in the Budget Form.

Funding Instrument

Grants in conformance with NASA Grant and Cooperative Agreement Handbook (NPG 5800.1D) dated July 23, 1996, will be generated in order to fund successful proposals.

Other Conditions

NASA may desire to select only a portion of a proposer's investigation, in which case the proposer will be given the opportunity to accept or decline such partial support. Under this program, salary requests may be made for research, but may not be made for teaching.

Schedule

The schedule for the release, due date, selection, and start of funding of proposals for this NRA is as follows:

November 26, 1996	Release of the NRA
February 26, 1997	Proposals due
April 1997	Target date for announcement of selection
June 1997	Target date for start of funding

Successful and unsuccessful proposers will be contacted directly by the NASA Research Program Management Division.

Further Information

Questions regarding proposal preparation and submission, policies, and evaluation procedures should be sent via E-mail to: Dr. Guenter Riegler at <guenter.riegler@hq.nasa.gov>, telephone (202) 358-1588, or at Research Program Management Division, Code SR, Office of Space Science, NASA Headquarters, Washington, DC 20546-0001, USA

Standard Forms

Enclosed in this appendix are forms that should be used in preparing proposals responding to this NRA:

1. Proposal Budget Form
2. Current and Pending Federal Support Form
3. Certifications - Drug-Free Workplace, Debarment and Suspension, and Lobbying
4. NASA Mailing List Update (http://www.hq.nasa.gov/office/oss/research.htm)

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NASA PROPOSAL BUDGET FORM - LONG-TERM SPACE ASTROPHYSICS PROGRAM NRA 96-OSS-13

Principal Investigator	Institution		Proposal Title				
A. Salaries, Senior Personnel	Monthly or Hourly Rate	No. of Months	Funds Grant Year 1	Funds Grant Year 2	Funds Grant Year 3	Funds Grant Year 4	Funds Grant Year 5
1. PI		12	$	$	$	$	$
2. Co-I		12					
3. Co-I		12					
4. Co-I		12					
B. Salaries or Wages, Other Personnel (show numbers in parentheses)							
1. ( ) Post Doctoral Associates							
2. ( ) Other Professionals (Technicians, Programmers, etc.)							
3. ( ) Clerical							
4. ( ) Other (specify)							
C. Fringe Benefits (If charged as direct costs, specify)							
Total Salaries, Wages, and Fringe Benefits (A+B+C)			$	$	$	$	$
D. Permanent Equipment, Incl. Workstation (list each item > $5000; continue on separate sheet if necessary)							
Total Permanent Equipment			$	$	$	$	$
E. Travel, Domestic (Incl. Canada, U.S. Possessions)							
Travel, Foreign							
F. Other Direct Cost							
1. Materials and Supplies							
2. Publication Costs (rate/page x no. of pages)							
3. Computer Services (rate/hr)							
4. Subgrants/Contracts (specify)							
5. Other (specify)							
G Total Direct Cost (A through F)			$	$	$	$	$
H. Indirect Costs (specify)							
I. Total (G+H)			$	$	$	$	$
PI (signature)							
Cognizant Institutional Officer (typed name and signature)			Position/Title				
			Address and Tel. No. of Institution's Sponsored Research Office				

Funding begins on June 1st of each grant year

If more space is needed, please continue on back of this form or use separate sheet.

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CURRENT AND PENDING FEDERAL SUPPORT FORM
LONG-TERM SPACE ASTROPHYSICS PROGRAM

NRA 96-OSS-13

Principal Investigator:	Institution:				
	Funding Agency, Incl. Grant/Contract No. (If known) Project Title	Award Amount FY 1997	Total Award Amount	Total Award Period	% of Effort Committed to Project
Current Support					
Proposals Pending 1. This Proposal					
2. Other Pending Proposals					
Co-Investigator 1:	Institution:				
Current Support					
Proposals Pending					
Co-Investigator 2:	Institution:				
Current Support					
Proposals Pending					

If more space is needed, please continue on back of this form or use separate sheet.

NASA 1994

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Certification Regarding Drug-Free Workplace Requirements
Grantees Other Than Individuals

This certification is required by the regulations implementing the Drug-Free Workplace Act of 1988, 34 CFR Part 85, Subpart F. The regulations, published in the January 31, 1989 Federal Register, require certification by grantees, prior to award, that they will maintain a drug-free workplace. The certification set out below is a material representation of fact upon which reliance will be placed when the agency determines to award the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or government wide suspension or debarment (see 34 CFR Part 85, Sections 85.615 and 85.620).

This grantee certifies that it will provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing a drug-free awareness program to inform employees about -

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs, and

(4) The penalties that may be imposed upon employees for drug abuse violations in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will -

(1) Abide by the terms of the statement; and

(2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;

(e) Notifying the agency within ten days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction;

(f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted -

(1) Taking appropriate personnel action against such an employee, up to and including termination; or

(2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraph (a), (b), (c), (e), and (f).

Organization Name PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature Date

ED 80-0004

Certification Regarding Debarment, Suspension, and Other Responsibility Matters Primary Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participant's responsibilities. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211). Copies of the regulation may be obtained by contacting the U.S. Department of Education, Grants and Contracts Service, 400 Maryland Avenue, S.W. (Room 3633 GSA Regional Office Building No. 3), Washington, DC. 20202-4725, telephone (202) 732-2505.

(1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statues or commission of embezzlement theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and

(d) Have not within three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature Date

ED Form GCS-008 (REV.12/88)

Certification Regarding Lobbying

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000, and not more than $100,000 for each such failure.

_____

Signature Date

_____

Name and Title of Authorized Representative

_____

Organization Name

NRA 96-OSS-13 (LTSA)

NASA Research Announcement (NRA)/Announcement of Opportunity (AO) Mailing List Update

If your current address is NOT up-to-date, please fill out this form completely.

This is the update form for the NASA Office of Space Sciences (OSS) NRA/AO mailing list. Please fill out CONTACT INFORMATION completely. Check only those that apply in Institution Type and Discipline. Fold the form, secure with tape, and mail it back to the address on the reverse side. Proper postage must be applied.

MUST CHECK ONE

Please check which announcements you would like to receive:

- ☐ 1. NASA Research Announcements (basic, non-flight, on-going research)
- ☐ 2. Announcements of Opportunity (specific space flight mission)

Must check one, please include code number from mailing label:

- ☐ 1. Please *add* my name to the mailing list.
- ☐ 2. Please *remove* my name from the mailing list (please attach mailing label)
- ☐ 3. Please *update* my current listing.

CONTACT INFORMATION If your address has changed or your mailing label is incorrect, please provide *COMPLETE* contact information.

Code Number: (obtain from mailing label) | Salutation: (Mr.,Mrs.,Ms.,Dr.,Prof.,etc.) | Suffix (Ret.,PhD.,Jr.,III,etc.)

First Name: | MI: | Last Name:

Organization:

Division / Department:

Street:

City: | State: | Zip:

Telephone No: | Fax No:

E-Mail Address: _____ Internet Address: _____

Country: (foreign addresses, please specify)

Institution Type

(check only those that apply)

- ☐ 1. College or University
- ☐ 2. Minority College or University
- ☐ 3. Foreign Addressee
- ☐ 4. Minority Business
- ☐ 5. NASA HQs/Center
- ☐ 6. Nonprofit Corporation
- ☐ 7. Other Government Agency
- ☐ 8. Private Industry
- ☐ 9. Small Business

Societies:

- ☐ A. American Astronomical Society
- ☐ B. American Geophysical Union
- ☐ C. Others _____

Discipline:

(check only those that apply)

MUST CHECK AT LEAST ONE

1. Astronomy and Astrophysics

- ☐ A. Theory and Modeling
- ☐ B. Instrumentation (Technology Dev)
- ☐ C. Laboratory Astrophysics
- ☐ D. Data Analysis (Archival)
- ☐ E. Observational Programs

2. Solar System Exploration

- ☐ A. Planetary Atmospheres and Astronomy
- ☐ B. Planetary Materials and Geochemistry
- ☐ C. Planetary Geology and Geophysics
- ☐ D. Instrument Development
- ☐ E. Origins of Solar Systems
- ☐ F. Exobiology

3. Space Physics

- ☐ A. Cosmic and Heliosphere Physics
- ☐ B. Solar Physics
- ☐ C. Magnetospheric Physics
- ☐ D. Iono-Thermo-Mesospheric Physics

4. Information Systems/Computer Science

- ☐ A. High Performance Computing and Networking
- ☐ B. Scientific Data Analysis and Visualization
- ☐ C. Science Data Storage and Management
- ☐ D. Software Technology

SPI 7/94

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